

McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition



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On the cover: Pattern produced from white light by a computer-generated diffraction plate containing 529 square apertures arranged in a 23 × 23 array. (R. B. Hoover, Marshall Space Flight Center)

On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini spacecraft. (NASA)

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showing a specific end apparatus arranged in a punctate manner and connected with the pressure sense. { 'preshər pōɪ̄n̄ }

pressure process [CHEM ENG] Treatment of timber to prevent decay by forcing a preservative such as creosote and zinc chloride into the cells of the wood. { 'preshər ,prä'səs̄ }

pressure radius [PETRO ENG] The effective radius of increased reservoir pressure surrounding a water-injection well. { 'preshər ,rād̄-ē̄s̄ }

pressure rating [ENG] The operating (allowable) internal pressure of a vessel, tank, or piping used to hold or transport liquids or gases. { 'preshər ,rād̄-īḡ }

pressure-regulating valve [ENG] A valve that releases or holds process-system pressure (that is, opens or closes) either by preset spring tension or by actuation by a valve controller to assume any desired position between full open and full closed. { 'preshər ,reḡ-yā,läd̄-īn̄ ,valv̄ }

pressure regulator [ENG] Open-close device used on the vent of a closed, gas-pressured system to maintain the system pressure within a specified range. { 'preshər ,reḡ-yā,läd̄-ər }

pressure release [GEOPHYS] The outward-expanding force of pressure which is released within rock masses by unloading, as by erosion of superincumbent rocks or by removal of glacial ice. { 'preshər ri,lé̄s̄ }

pressure-release jointing [GEOL] Exfoliation that occurs in once deeply buried rock that erosion has brought nearer the surface, thus releasing its confining pressure. { 'preshər ri,lé̄s̄ ,jōint̄-īn̄ }

pressure relief [ENG] A valve or other mechanical device (such as a rupture disk) that eliminates system overpressure by allowing the controlled or emergency escape of liquid or gas from a pressurized system. { 'preshər ri,lé̄f̄ }

pressure relief device [MECH ENG] 1. In pressure vessels, a device designed to open in a controlled manner to prevent the internal pressure of a component or system from increasing beyond a specified value, that is, a safety valve. 2. A spring-loaded machine part which will yield, or deflect, when a predetermined force is exceeded. { 'preshər ri,lé̄f̄ dīvis̄ }

pressure relief valve [MECH ENG] A valve which relieves pressure beyond a specified limit and recloses upon return to normal operating conditions. { 'preshər ri,lé̄f̄ ,valv̄ }

pressure resistance [FL MECH] In fluid dynamics, a normal stress caused by acceleration of the fluid, which results in a decrease in pressure from the upstream to the downstream side of an object acting perpendicular to the boundary. Also known as pressure drag. { 'preshər ri,zis̄-tāns̄ }

pressure-retaining member [MECH ENG] That part of a pressure-relieving device loaded by the restrained pressurized fluid. { 'preshər ri,tān̄-īḡ ,mem̄-bər }

pressure ridge [GEOL] 1. A seismic feature resulting from transverse pressure and shortening of the land surface. 2. An elongate upward movement of the congealing crust of a lava flow. 3. A ridge of glacier ice. [OCEANOGR] A ridge or wall of hummocks where one ice floe has been pressed against another. { 'preshər ,rij̄ }

pressure ring [MIN ENG] A ring about a large excavated area, evidenced by distortion of the openings near the main excavation. { 'preshər ,riŋ̄ }

pressure-rise center [METEOROL] A point of maximum increase in atmospheric pressure over a specified interval of time; on synoptic charts, a point of maximum positive pressure tendency. Also known as anabobaric center; center of rises; isallobaric high; isallobaric maximum. { 'preshər ,riž̄ ,sen̄-tər̄ }

pressure roll [ENG] In plastics-extrusion coating, the roll that with the chill roll applies pressure to the substrate and the molten extruded web. { 'preshər ,rōl̄ }

pressure seal [ENG] A seal used to make pressure-proof the interface (contacting surfaces) between two parts that have frequent or continual relative rotational or translational motion. { 'preshər ,sēl̄ }

pressure-sensitive adhesive [MATER] An adhesive that develops maximum bonding power when applied by a light pressure only. { 'preshər ,sen̄-səd̄īv̄ ad̄-hē̄s̄ }

pressure shadow [PETR] In structural petrology, an area adjoining a porphyroblast, characterized by a growth fabric rather than a deformation fabric, as seen in a section perpendicular to the *b* axis of the fabric. Also known as pressure fringe; strain shadow. { 'preshər ,shad̄ō }

pressure shift [SPECT] An increase in the wavelength at

which a spectral line has maximum intensity, which takes place when pressure is increased. { 'preshər ,shift̄ }

pressure solution [PETR] In a sedimentary rock, solution occurring preferentially at the grain boundary surfaces. Also known as pressolution. { 'preshər sə,lǖshən̄ }

pressure-stabilized [AERO ENG] Referring to membrane-type structures that require internal pressure for maintenance of a stable structure. { 'preshər ,stā'bə,liz̄d̄ }

pressure still [CHEM ENG] A continuous-flow, petroleum-refinery still in which heated oil (liquid and vapor) is kept under pressure so that it will crack (decompose into smaller molecules) to produce lower-boiling products (pressure distillate or pressure naphtha). { 'preshər ,stil̄ }

pressure storage [ENG] The storage of a volatile liquid or liquefied gas under pressure to prevent evaporation. { 'preshər ,stō̄r̄ij̄ }

pressure suit [AERO ENG] A garment designed to provide pressure upon the body so that respiratory and circulatory functions may continue normally, or nearly so, under low-pressure conditions such as occur at high altitudes or in space without benefit of a pressurized cabin. { 'preshər ,süt̄ }

pressure suppression See vapor suppression. { 'preshər ,sō̄p̄rəs̄hən̄ }

pressure surface See potentiometric surface. { 'preshər ,sō̄r̄fəs̄ }

pressure-surface map See potentiometric map. { 'preshər ,sō̄r̄fəs̄ ,map̄ }

pressure survey [MIN ENG] A study to determine the pressure distribution or pressure losses along consecutive lengths or sections of a ventilation circuit. [PETRO ENG] The measurement of static bottomhole pressures in an oil field with producing wells shut in for a time interval sufficient for reservoir pressure buildup to stabilize. { 'preshər ,sər̄vā̄ }

pressure switch [ELEC] A switch that is actuated by a change in pressure of a gas or liquid. { 'preshər ,swit̄ch̄ }

pressure system [ENG] Any system of pipes, vessels, tanks, reactors, and other equipment, or interconnections thereof, operating with an internal pressure greater than atmospheric. [METEOROL] An individual cyclonic-scale feature of atmospheric circulation, commonly used to denote either a high or a low, less frequently a ridge or a trough. { 'preshər ,sīs̄təm̄ }

pressure tank [CHEM ENG] A pressurized tank into which timber is inserted for impregnation with preservative. [CIV ENG] An airtight water tank in which air is compressed to exert pressure on the water and which is used in connection with a water distribution system. { 'preshər ,tānk̄ }

pressure tap [ENG] A small perpendicular hole in the wall of a pressurized, fluid-containing pipe or vessel; used for connection of pressure-sensitive elements for the measurement of static pressures. Also known as piezometer opening; static pressure tap. { 'preshər ,tāp̄ }

pressure tendency [METEOROL] The character and amount of atmospheric pressure change for a 3-hour or other specified period ending at the time of observation. Also known as barometric tendency. { 'preshər ,ten̄dən̄s̄ }

pressure-tendency chart See pressure-change chart. { 'preshər ,ten̄dən̄s̄ ,chārt̄ }

pressure tensor [PL PHYS] A tensor which plays a role in magnetohydrodynamics analogous to that of the pressure in ordinary fluid mechanics. { 'preshər ,ten̄sər̄ }

pressure thrust [AERO ENG] In rocketry, the product of the cross-sectional area of the exhaust jet leaving the nozzle exit and the difference between the exhaust pressure and the ambient pressure. { 'preshər ,thrust̄ }

pressure topography See height pattern. { 'preshər ,tā,pāḡ-rāf̄ }

pressure transducer [ENG] An instrument component that detects a fluid pressure and produces an electrical signal related to the pressure. Also known as electrical pressure transducer. { 'preshər ,trāns̄,dū̄s̄ }

pressure-travel curve [MECH] Curve showing pressure plotted against the travel of the projectile within the bore of the weapon. { 'preshər ,trāv̄-əl ,kərv̄ }

pressure traverse [PETRO ENG] Measurement of reservoir pressures at progressive depths. { 'preshər ,trā,vār̄s̄ }

pressure treater [CHEM ENG] Any chemical treating device operated at higher-than-atmospheric pressure, as in the chemical and petroleum industries. { 'preshər ,trēd̄ər̄ }